THE CLAIMS

What is claimed is:

1. An xDSL modem comprising:

a hybrid circuit for interfacing the twisted pair transmission line to a receiver and also to a transmitter, wherein

the hybrid circuit is provided with an adjustable termination impedance.

2. The xDSL modem of claim 1, wherein

the adjustable termination impedance comprises a multiplexer configured to selectively connect at least one transformer of said hybrid circuit to at least one discrete component.

3. The xDSL modem of claim 2, wherein

the adjustable termination impedance comprises a multiplexer configured to selectively connect a pair of transformers of said hybrid circuit to at least two discrete components.

4. The xDSL modem of claim 2, wherein

the multiplexer is connected to a controller configured to provide a signal to cause the multiplexer to selectively connect said at least one discrete component.

5. The xDSL modem of claim 1, wherein

the hybrid circuit comprises first and second transformers, said first transformer being connected to said receiver and said second transformer being connected to said transmitter, and wherein

said first and second transformers are both connected to said common adjustable termination impedance.

6. The xDSL modem of claim 5, wherein

the adjustable termination impedance comprises a multiplexer configured to selectively and simultaneously connect both of said first and second transformers to at least one discrete component.

7. The xDSL modem of claim 6, wherein

the multiplexer is connected to a controller configured to provide a signal to cause the multiplexer to selectively and simultaneously connect both of said first and second transformers to said at least one discrete component.

8. The xDSL modem of claim 1, wherein

the adjustable termination impedance comprises at least one linear device configured to change one of a resistance, a capacitance or an inductance, in response to a variable voltage.

9. The xDSL modem of claim 8, wherein said at least one linear device comprises one of a field effect transistor, a varactor, an a gyrator.

10. A method of operating an xDSL modem comprising:

measuring at least one property of a communication channel connected to said modem; and

changing a hybrid termination impedance based on a measurement of said at least one property.

11. The method of claim 10, comprising

determining at least one of a background noise profile of the channel, a channel loss characteristic and local echo power; and

changing a hybrid termination impedance based on a result of said determining step.

12. The method of claim 11, wherein the hybrid termination impedance is changed to one from a finite number of discrete hybrid termination impedance values.

13. The method of claim 12, wherein the hybrid termination impedance is changed to a hybrid termination impedance value within a predetermined continuous range.

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